

## **WEB TEAM OVERVIEW**

**JET PROPULSION LABORATORY**

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### **Background**

- **Major factor in DOE'S PV Plan is low cost Si sheet**
- **Leading contender is dendritic web**
- **Requirement for DOE goals is sustained growth of 20 to 30 cm<sup>2</sup>/m**
- **Major problems are thermal stresses and instability at the growth interface**
- **Progress in solving these problems has been slow**
- **FSA Project suggested in-house development effort to help solve technical problems**
- **DOE approved suggestion**
- **Accordingly, Web Team was formed within the FSA Project**

### **Objective**

- **To conduct an in-house development activity which will increase the likelihood that web technology will help achieve the DOE goals**

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## Approach

- **Team effort consists of combination of analytical and experimental work**
- **Operate a Westinghouse web growth system**
- **Measure high temperature properties of silicon**
- **Use stress model to determine a temperature profile which will yield satisfactory web**
- **Use thermal model of web to determine a thermal configuration which will yield the desired temperature profile**
- **Use thermal analysis of growth interface and the susceptor—crucible—melt to determine a thermal configuration which will improve stability of growth process**
- **Design, fabricate and test the thermal configurations and feed results back into the models**